

In the claims

1.-11. (cancelled)

12. (currently amended) A high-resolution magnetic encoder system comprising:

a magnetic surface having a latent magnetic pattern corresponding to an encoder servo pattern;

a magnetic resistive sensor to detect the latent magnetic pattern to read out the latent magnetic pattern to quantitatively detect movement of the magnetic resistive sensor and the magnetic surface relative to one another; and,

a fixed suspension to which the magnetic resistive sensor is mounted above a magnetic medium having the magnetic surface.

wherein the sensor is adapted to perform a relative movement with respect to and in close contact to [[a]] the magnetic surface of the magnetic medium.

13. (previously presented) The high-resolution magnetic encoder system of claim 12, further comprising a mechanism to which the fixed suspension is attached.

14. (previously presented) The high-resolution magnetic encoder system of claim 13, wherein the mechanism is a substrate.

15. (previously presented) The high-resolution magnetic encoder system of claim 14, wherein the substrate is an electronic board.

16. (previously presented) The high-resolution magnetic encoder system of claim 13, wherein the mechanism is a housing.

17. (previously presented) The high-resolution magnetic encoder system of claim 12, wherein the magnetic medium is protected by an overcoat layer.

18. (previously presented) The high-resolution magnetic encoder system of claim 17, wherein the overcoat layer is one of DLC,  $C_xN_y$ ,  $BN_x$ , cBN,  $B_xC_y$ ,  $B_xC_y-N_z$  gradient layer,  $SiN_x$ , SiC, TiN, WC,  $AlO_x$ .

19. (previously presented) The high-resolution magnetic encoder system of claim 12, wherein the magnetic medium is a magnetic layer deposited on a rotating disk.

20. (previously presented) The high-resolution magnetic encoder system of claim 12, wherein the magnetic medium is a planar disk having magnetic encoder features that are readable by the magnetic resistive sensor.

21. (previously presented) The high-resolution magnetic encoder system of claim 12, wherein the magnetic resistive sensor is a read/write magnetic head.

22. (previously presented) The high-resolution magnetic encoder system of claim 12, wherein the magnetic resistive sensor is a Giant Magnetic-Resistive (GMR) sensor.

23. (previously presented) The high-resolution magnetic encoder system of claim 12, wherein the magnetic resistive sensor is a Tunneling Magnetic-Resistive (TMR) sensor.

24. (previously presented) The high-resolution magnetic encoder system of claim 12, wherein the system is encapsulated.

25. (currently amended) A high-resolution magnetic encoder system comprising:

a magnetic surface having a latent magnetic pattern corresponding to an encoder servo pattern;

magnetic means for sensing [[a]] the magnetic surface of a magnetic medium with respect to which the magnetic means performs a relative movement and with which the magnetic means is in close contact, the magnetic means further for detecting the latent magnetic pattern to read out the latent magnetic pattern to quantitatively detect movement of the magnetic means and the magnetic surface relative to one another; and,

suspension means for suspending the magnetic means in a fixed manner above the magnetic medium.

26. (previously presented) The high-resolution magnetic encoder system of claim 25, wherein the magnetic means comprises one of a Giant Magnetic-Resistive (GMR) sensor and a Tunneling Magnetic-Resistive (TMR) sensor.

27. -31. (cancelled)